

is given. And also that to the centrum ovale as seen in the sagittal, horizontal, and coronal planes.

The knowledge of the exact part of the brain which is supplied by any artery is of great importance in the diagnosis of the parts of the brain which undergo softening when this particular artery is blocked by a blood clot.

On the Cranial and Facial Characters of the Neandertal Race.

By W. J. SOLLAS, Sc.D., LL.D., Professor of Geology in the
University of Oxford.

(Received May 15,—Read November 14, 1907.)

(Abstract.)

As a result of a detailed comparison of the calvarium of the Neandertal race with that of the aborigines of South Australia, it is shown that a much closer resemblance exists between them than has hitherto been supposed, especially as regards the calottal height, calottal index, Schwalbe's ("bregma") angle, the bregma index, the frontal and orbito-frontal angles, the superior ("lambda") and inferior inion angles, and the fronto-parietal index. The chief differences are to be found in the magnitude of the cephalic index, the continuity of the frontal torus, and the deeply impressed character of the frontal fossa.

Comparisons based on the glabella-inion line are misleading, owing to the inconstancy in position of the inion. In the absence of any fixed point in the skull, the centre of figure of the median longitudinal section is chosen for a point of reference, and a radius drawn from this to the basion as an initial line for the measurement of polar co-ordinates.

The exterior foramino-basal angle owes its perplexing anomalies to the fact that its magnitude is determined by five independent variables, one of which is connected with the cranial height, so that in depressed forms of skull it acquires a higher value than might otherwise be expected.

The Gibraltar skull, preserved in the Royal College of Surgeons, is the only example of the Neandertal race which presents the bones of the face and the basi-cranial axis in undisturbed connection with the calvarium. Its characters, apart from the cranial vault, are unique: no other known skull possesses so long a face, such a large and broad nasal aperture, or such projecting nasal walls. In profile, the nasal curve flows into that of the glabella,

without any sudden change of flexure, that is, there is no nasal notch, such as occurs in the Australians.

The orbit, as in all skulls of the Neandertal race, is distinguished by its excessive height above a line drawn from the nasion to the middle of the fronto-zygomatic suture: in a low South Australian skull this height amounts to between 8 and 10 mm., in the Gibraltar skull to between 12 and 14 mm., and in the Neandertal calotte to between 19 and 20 mm. A further character of the orbits is the absence of a well-defined lower margin.

The absence of a canine fossa has been remarked upon by Huxley.

In the absence of the prosphenion and ephippium, the sphenethmoidal angle has been measured from the limbus sphenoidalis by a line drawn to the crista galli on the one hand and the basion on the other: it exceeds the corresponding angle of the lowest known South Australian skull, similarly measured, by $16^{\circ} 30'$.

The palate is parallel-sided and very dolicho-uranic. The thickness of the frontal bone, measured on one side of the crista galli, is 24 mm. The prognathism of the upper jaw, in whatever way it is measured, is extremely small, so that according to existing nomenclature the skull would be classed as orthognathous.

The cranial capacity is estimated as 1250 c.c., and thus makes a close approach to that of the Neandertal calotte. The average capacity of South Australian skulls is very similar, but ranges from 1460 to 1100 c.c. If the calotte of *Pithecanthropus* represents the mean of a similarly variable race, then the extreme forms of such a race would almost completely bridge over the hiatus between man and the higher apes.
